

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application:

1. – 8. (canceled)

9. (New) A thermal hydro-machine for conversion of heat energy into mechanical work comprising:

(a) a first assembly comprising:

(i) a rotational heat exchanger comprising a set of interconnected segment collectors arranged in the form of a cylinder's shell, wherein the interconnected segment collectors are capable of receiving heat and are capable of delivering heat depending on the position of the segment collectors relative to a heat source or cooled space when a compressible medium or working gas is under pressure;

(ii) a set of working segment cylinders with free pistons or a set of working segment chambers with an elastic membrane, wherein said set of working segment cylinders with free pistons or said set of working segment chambers with an elastic membrane are connected and functionally paired with said segment collectors, and wherein when said compressible medium or said working gas is under pressure the compressible medium or the working gas fills the set of working segment cylinders with free pistons or the set of working segment chambers and it fills said segment collectors;

(iii) directed narrowed-down curved channels that directly connect said working segment cylinders or said working segment chambers with a working vane wheel, thereby directing and accelerating an incompressible medium or liquid in a concentrated way toward the center of said working vane wheel;

(iv) return widening curved channels for the recirculation of said incompressible medium or liquid, wherein said return widening curved

channels are directly connected with said directed channels and with said working vane wheel;

(v) return widening curved channels for abstracting said incompressible medium or liquid, wherein said return widening curved channels are directly connected with said working segment cylinders or with said working segment chambers and are directly connected with said working vane wheel;

(vi) arch wise mobile vanes for closing and opening of said return widening curved channels for abstracting of said incompressible medium or liquid, or axially mobile closers with the capability for a two-direction axial motion for the closing and opening of an exit of said return widening curved channels for abstracting of said incompressible medium or liquid, which are firmly fastened on the free pistons in said segment cylinders or on the mobile elastic membranes in said segment chambers; and

(vii) inserted transmitter on a casing of said first assembly;

(b) a second assembly comprising:

(i) a working shaft that is freely embedded on said casing of said first assembly and a machine stand, wherein said working vane wheel is firmly fastened or wedged on said working shaft and wherein a hydrodynamic flow energy of said incompressible medium or liquid converts into the rotational mechanical work;

(ii) a driving transmitter of the relative motion, wherein the driving transmitter is firmly fastened or wedged on said working shaft and coupled with a driven pair of intermediate transmitters; and

(iii) a generator's rotor that is firmly fastened or wedged on said working shaft; and

(c) a third assembly comprising:

(i) said driven pair of intermediate transmitters, wherein said driven pair of intermediate transmitters are placed coaxially with respect to said working shaft and freely embedded on the shaft of an embracing carrier;

- (ii) said embracing carrier, wherein said embracing carrier is freely embedded on said machine stand; and
- (iii) said machine stand to which the casing or a stator of said generator is firmly fastened.

10. (New) The thermal hydro-machine according to claim 9 wherein said compressible medium or working gas is heated by conduction of heat via a first portion of the rotational heat exchanger in a hot space and in the same time cooled by conduction of heat to a second portion of the rotational heat exchanger in the cooled space, thereby enabling in said working segment cylinders or in said working segment chambers a real, continuous, reversible and unique right-turning, circular thermodynamic cycle for the conversion of the thermal energy into the mechanical work, wherein said cycle comprises:
- an isothermal compression from state one to state two;
 - an isobaric expansion from state two to state three;
 - an isothermal expansion from state three to state four; and
 - an isochoric heat conducting from state four to state one.
- 11 (New) The thermal hydro-machine according to claim 9, wherein said first assembly accomplishes a first rotational motion and said second assembly accomplishes a second rotational motion, wherein said first rotational motion is slower than said second rotational motion.
- 12 (New) The thermal hydro-machine according to claim 11, wherein said driving transmitter of the second assembly, said driven pair of intermediate transmitters of the third assembly and the inserted transmitters of the third assembly are coupled to one another.
13. (New) The thermal hydro-machine according to claim 9 further comprising an adjustable catalytic hydrodynamic connection between a hot and cooled part

of the machine that enables functioning without a significant time phase shift between a set of expansions and a set of compressions of the compressible medium or working gas.

14. (New) The thermal hydro-machine according to claim 9, wherein said return widening curved channels start at an exit of said working vane wheel and are wider arch wise toward said directed channels on the periphery.
15. (New) The thermal hydro-machine according to claim 9, wherein said return curved channels for exertion of recirculation of the incompressible medium or liquid start at an exit of said working vane wheel and get wider arch wise toward said working segment cylinders or, alternatively, toward said working segment chambers, wherein their exertion function is determined by the relative position with respect to the cooled space.
16. (New) The thermal hydro-machine according to claim 9, wherein said arch wise mobile vanes on the entrance of said return abstracting channels open said return abstraction channels accomplishing the abstraction of a part of said recirculation incompressible medium or liquid towards a cooled part of the machine for filling-up of an emptied space in an amount that is pressed out from a hot part of the machine.
17. (New) The thermal hydro-machine according to patent claim 9, wherein said axially mobile closers for closing the exits of said return abstracting channels in a hot part of the machine or for opening the exits of said return abstracting channels in a cooled part of the machine are rigidly fastened on the free pistons in said working segment cylinders or alternatively, are rigidly fastened on elastic membranes in said working segment chambers, thereby enabling the abstraction of a part of the recirculation incompressible medium or liquid

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toward the cooled part of the machine for the filling-up of an emptied space in an amount that is pressed out from the hot part of the machine.